

METADATA FOR STUDIES CONTAINED IN THE  
DEPARTMENT OF PESTICIDE REGULATION'S  
SURFACE WATER DATABASE (SWDB),  
as of February, 2006.

DEPARTMENT OF PESTICIDE REGULATION (SWDB study code 6): "Results of monitoring for the herbicide MCPA in surface water of the Sacramento River basin" by P.L. Wofford and P.Lee, DPR report EH95-11, 1995. 333 pesticide analysis records; water quality data. Samples were collected twice a week from February 21, 1992 through April 14, 1992 from a total of seven sites: four on the Sacramento River (at and north of Sacramento), one at Colusa Basin Drain, one at Sacramento Slough, and one on the Feather River. Samples were analyzed by GC/MSD for MCPA, dicamba, and 2,4-D. 2,4-D was detected at 5 sites, MCPA at 3 sites, and dicamba at one site. Method validation, field blanks, and spike recovery data given. Data entered from raw data sheets. Report available: <http://www.cdpr.ca.gov/docs/sw/swemreps.htm>

UNITED STATES GEOLOGICAL SURVEY (9): "Dissolved pesticide data for the San Joaquin River at Vernalis and the Sacramento River at Sacramento, California, 1991-94" by D. MacCoy, K.L. Crepeau, and K.M. Kuivila, open-file report 95-110, 1995. 19,118 records; no biotoxicity monitoring; no water quality data. Samples were collected daily or every other day from May 1991 through April 1994 at Sacramento and from January 1991 through April 1994 at Vernalis, filtered, and analyzed by GC/MS for a total of 20 active ingredients and breakdown products. A total of 7 compounds were detected at Sacramento; a total of 13 compounds were detected at Vernalis. QA/QC information given in report and in USGS open-file report 94-362. Data entered from hard-copy report and Excel data files.

DEPARTMENT OF PESTICIDE REGULATION (10): "Distribution and mass loading of insecticides in the San Joaquin River, California: spring 1991 and 1992" by L.J. Ross, R. Stein, J. Hsu, J. White, and K. Hefner, DPR report EH 99-01, 1999; "Distribution and mass loading of insecticides in the San Joaquin River, California" (DPR report EH 96-02) by L.J. Ross, R. Stein, J. Hsu, J. White, and K. Hefner, 1996; four memoranda by L. Ross (DPR), and six memoranda by R. Fujumura (DFG). 10,955 pesticide analysis records, 204 biotoxicity test result measurements, water quality data reported. Water samples were collected from the San Joaquin River at Laird Park seasonally from 1991 through 1993. Lagrangian samples were also taken from 23 tributary inputs to monitor mass loading. Samples were analyzed for a total of 37 active ingredients and breakdown products. Overall, a total of 22 active ingredients and breakdown products were detected. Acute toxicity tests were conducted on *C. dubia* and *N. mercedis* by Department of Fish and Game Aquatic Toxicology Laboratory. Significant mortality was seen in 31 of the 204 bioassay measurements. Ratio of biotoxicity test samples analyzed for pesticides = 1:1. Continuing quality control summaries and blind spike results given in reports; QA/QC statement given in memoranda. Data entered from raw data sheets. Reports available: <http://www.cdpr.ca.gov/docs/sw/swemreps.htm> .

STATE WATER RESOURCES CONTROL BOARD (13): "Colorado River Basin Toxicity Report, Draft Final, March 1993 through February 1994" prepared for V. de Vlaming and G. Starrett, SWRCB; prepared by C. DiGiorgio, H.C. Bailey, and D.E. Hinton, UCD, Interagency Agreement 0-149-250-0. Total of 4,997 chemical analyses. Samples were collected twice a month from 11 fixed sampling sites on the Alamo River. Samples were analyzed for 73 compounds, 22 were detected. Biotoxicity monitoring and TIE results will be entered as time allows; no water quality data. Some QA/QC information included in report; data entered from hard-copy report.

DEPARTMENT OF PESTICIDE REGULATION (14): "Temporal distribution of insecticide residues in four

California Rivers” by C. Ganapathy et al., DPR report EH 97-06, 1997. 8,481 pesticide analysis records, 191 biotoxicity test result measurements, water quality data reported. Water samples were collected weekly from the Salinas and Russian rivers from August 1994 through August 1995, from the Sacramento River from November 1993 through November 1994, and the Merced River from June 1994 through June 1995. The samples were analyzed by GC/FPD, HPLC/PCDFD, GC/ECD, or GC/NPD for 37 compounds. Chlorpyrifos, diazinon, dimethoate, methidathion, and 3-hydroxycarbofuran were detected. Acute toxicity tests were conducted on *Ceriodaphnia dubia* and *Pimephales promelas* by Department of Fish and Game Aquatic Toxicology Laboratory. Significant mortality was seen in 3 of the 191 bioassay tests. Ratio of pesticide analysis samples to biotoxicity testing samples = 1:1. Method validation information and continuing quality control summary given in report. Data entered from raw data sheets.  
Report available: <http://www.cdpr.ca.gov/docs/sw/swemreps.htm> .

DEPARTMENT OF PESTICIDE REGULATION (17): “Information on rice pesticides submitted to the California Regional Water Quality Control Board, Central Valley Region, December 28, 1995” by N.K.N.Gorder and J.M.Lee. 326 pesticide analyses records, 11 biotoxicity test result measurements, water quality data reported. Water samples were collected from Colusa Basin Drain, Butte Slough, and the Sacramento River during April through July 1995 and analyzed for 5 rice pesticides: molinate, carbofuran, thiobencarb, malathion, and methyl parathion. All 5 were detected at Colusa BD and Butte Slough. Acute biotoxicity testing was performed on 8 samples from Colusa BD; no significant biotoxicity was seen. Ratio of pesticide analysis samples to biotoxicity testing samples = 1:1. QA/QC general information given in report. Data entered from raw data sheets.  
Memo available: <http://www.cdpr.ca.gov/docs/sw/riceprog.htm> (1995 Rice Pesticide Program Update)

DEPARTMENT OF PESTICIDE REGULATION (30): “Information on rice pesticides submitted to the California Regional Water Quality Control Board Central Valley Region, December 31, 1996” by N.K.N.Gorder, J.M.Lee and K. Newhart. 350 pesticide analysis records, 7 biotoxicity test result measurements. Water samples were collected from Colusa Basin Drain, Butte Slough, and the Sacramento River at Village Marina (Sacramento County) during April through June 1996 and analyzed for the rice pesticides molinate, carbofuran, malathion, methyl parathion, and thiobencarb, and the phenoxy pesticides 2,4-D and MCPA. All 7 were detected at Colusa BD. Carbofuran, molinate, and thiobencarb were detected at Butte Slough. Molinate was detected in the Sacramento River. Acute biotoxicity testing was done on seven samples from Colusa BD; significant toxicity was seen in 1 sample. Ratio of pesticide analysis samples to biotoxicity testing samples = 1:1. QA/QC general information given in report; blind spike recoveries and field blank results in raw data. Data entered from raw data.  
Memo available: <http://www.cdpr.ca.gov/docs/sw/riceprog.htm> (1996 Report on the Rice Pesticide Program)

SUTTER COUNTY DEPT. OF AGRICULTURE (31): Samples were taken from an agricultural drain that supplies water to Sutter Basin on June 27, 1997 and analyzed by the California Department of Food and Agriculture laboratory for MCPA, 2,4-D, and triclopyr; all were detected. Data entered from copy of original data forwarded by Ron Thompson, Department of Pesticide Regulation, Pesticide Use Enforcement branch, June 1997. No QA/QC information; method of analysis not reported.

DEPARTMENT OF PESTICIDE REGULATION (32): “Occurrence of aquatic toxicity and dormant-spray pesticide detections in the San Joaquin River watershed, winter 1996-97” by K. P. Bennett, et al., 1998. 430 pesticide analysis records, 88 biotoxicity test result measurements, water quality data reported. Water samples were taken from a site on the main stem San Joaquin River and a site on Orestimba Creek, a tributary to the San Joaquin, during December 1996 to March 1997. Samples were analyzed by GC/FPD or HPLC/PCDFD for 10 pesticide active ingredients. Diazinon was detected at both sites. Dimethoate and carbofuran were also

detected at Orestimba Creek. Acute toxicity was tested using *Ceriodaphnia dubia* on samples taken from Orestimba. Chronic toxicity was tested for with *C. dubia* on samples taken from the San Joaquin. Significant biotoxicity was seen in 2 acute samples. Ratio of pesticide analysis samples to acute biotoxicity testing samples = 1:1; ratio of pesticide analysis samples to chronic biotoxicity testing samples = 1:1. Method validation, continuing quality control, and blind spike recoveries are given in report. Data entered from raw data. Report available: <http://www.cdpr.ca.gov/docs/sw/swemreps.htm>.

DEPARTMENT OF PESTICIDE REGULATION (33): "Occurrence of aquatic toxicity and dormant-spray pesticide detections in the Sacramento River watershed, winter 1996-97" by C. E. Nordmark, et al. 1998. 440 pesticide analysis records, 90 biotoxicity test result measurements, water quality data reported. Water samples were taken from the Sacramento River at Bryte and Sutter Bypass at Karnak and Kirkville Road during December 1996 to March 1997. Samples were analyzed by GC/FPD or HPLC/PCDFD for 10 pesticide active ingredients. Diazinon was detected in the Sacramento River and Sutter Bypass. Methidathion was also detected in the Sutter Bypass. Significant biotoxicity was not seen in acute or chronic samples. Ratio of pesticide analysis samples to acute and chronic biotoxicity testing samples = 1:1. Method validation, continuing quality control, and blind spike recoveries are given in report. Data entered from raw data. Report available: <http://www.cdpr.ca.gov/docs/sw/swemreps.htm>.

DEPARTMENT OF PESTICIDE REGULATION (34): "Information on rice pesticides submitted to the Central Valley Regional Water Quality Control Board, December 23, 1997" by DPR staff. 331 pesticide analysis records, 10 biotoxicity test result measurements. Water samples were collected from Colusa Basin Drain (CBD), Butte Slough (BS), and the Sacramento River at Village Marina (Sacramento County) during March through June 1997, and analyzed by GC/FPD, HPLC/PCDFD, GC/ECD, or GC/NPD for the rice pesticides carbofuran, malathion, methyl parathion, molinate, and thiobencarb. Molinate was detected at all 3 sites. Carbofuran, methyl parathion, and thiobencarb were detected at both CBD and BS. Malathion was also detected at Butte Slough. Acute biotoxicity testing was done on nine samples taken from Colusa Basin Drain, no significant toxicity was seen. Ratio of pesticide analysis samples to biotoxicity testing samples = 1:1. QA/QC general information given in memorandum. Data entered from raw data. Memo available: <http://www.cdpr.ca.gov/docs/sw/riceprog.htm> (1997 Rice Pesticides Program Review).

CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD (35): "Insecticide concentrations and invertebrate bioassay mortality in agricultural return water from the San Joaquin basin" by C. Foe, 1995. 5,224 pesticide analysis records and 1,732 biotoxicity test result measurements. Acute and chronic toxicity tests on *Ceriodaphnia dubia* were conducted on a total of 573 samples collected weekly from seven sites on the San Joaquin River and 14 of its tributaries from February 1991 through June 1992. Of those samples, 232 were analyzed by HPLC/PCDFD for 23 pesticide active ingredients and breakdown products. A total of 14 compounds were detected. Diazinon was detected at every site; chlorpyrifos was detected at all but one site. 115 bioassay samples showed significant toxicity. Ratio of pesticide analysis samples to biotoxicity testing samples = 1:2.3. QA/QC general information and interlaboratory comparisons given in report. Data entered from hard-copy report.

SAN FRANCISCO ESTUARY INSTITUTE REGIONAL MONITORING PROGRAM (36): San Francisco Estuary Institute Regional Monitoring Program, Dissolved Pesticide Concentrations in Water Samples. Data entered from reports. <http://www.sfei.org/>

DEPARTMENT OF PESTICIDE REGULATION (37): "Preliminary results of acute and chronic toxicity testing of surface water monitored in the Sacramento River watershed, winter 1997-98" by C. Nordmark, 1998. 1,100 pesticide analysis records, 93 biotoxicity test result measurements. Water samples were taken from the Sacramento River at Alamar (Sacramento County) and two sites in the Sutter Bypass from

December 1997 through March 1998. The samples were analyzed for 19 pesticide active ingredients. Diazinon and diuron were detected at all 3 sites. Methidathion and simazine were also detected in the Sacramento River at Alamar. Bromacil and simazine were also detected in Sutter Bypass. Significant biotoxicity was not seen in acute or chronic samples. Ratio of pesticide analysis samples to acute and chronic biotoxicity testing samples = 1:1. Continuing QC results and general QA/QC information are given in the memorandum. Data entered from original chain of custody reports. Summary memo available: <http://www.cdpr.ca.gov/docs/sw/swmemos.htm> .

DEPARTMENT OF PESTICIDE REGULATION (38): “Preliminary results of acute and chronic toxicity testing of surface water monitored in San Joaquin River watershed, winter 1997-98” by C. Ganapathy, 1999. 1,026 pesticide analysis records, 91 biotoxicity test result measurements. Water samples were taken from the San Joaquin River at Vernalis and Orestimba Creek, a tributary to the San Joaquin, from December 1997 through March 1998 and analyzed for a total of 19 pesticide active ingredients. Bromacil, cyanazine, diazinon, diuron, and simazine were detected at both sites. In addition, methidathion was detected in the San Joaquin River and chlorpyrifos and methyl parathion in Orestimba Creek. Significant mortality was seen in 3 acute samples from Orestimba Creek and 1 chronic sample from the San Joaquin River. Ratio of pesticide analysis samples to acute and chronic biotoxicity testing samples = 1:1. Continuing QC results and general QA/QC information are given in the memorandum. Data entered from original chain of custody reports. Summary memo available: <http://www.cdpr.ca.gov/docs/sw/swmemos.htm> .

UNITED STATES GEOLOGICAL SURVEY (39): “Transport of diazinon in the San Joaquin River Basin, California” by Charles R. Kratzer, 1997 (USGS National Water-Quality Assessment Program, open-file report 97-411). 92 pesticide analyses; no biotoxicity data. Specific conductance data reported. Nine sites (3 San Joaquin River tributaries and a downstream site and sites on the Merced, Tuolumne, and Stanislaus rivers) were sampled during storms in January and February 1994. Samples were analyzed for diazinon only. Diazinon was detected in every sample. Concentrations ranged from .004 to 2.9 ppb; average concentration 0.26. QA/QC and MDL details given in report. Data downloaded from NAWQA website. Originals at USGS.

DEPARTMENT OF PESTICIDE REGULATION (40): “Information on rice pesticides submitted to the California Regional Water Quality Control Board Central Valley Region, December 31, 1998” by N.K.N.Gorder and K.Newhart. 358 pesticide analyses, 8 bioassay results. Water samples were collected from Colusa Basin Drain, Butte Slough, and the Sacramento River during May, June, and July 1998 and analyzed for Molinate, thiobencarb, carbofuran, methyl parathion, malathion, propanil, triclopyr, and MCPA. All were detected at CBD; molinate was detected in Sacramento River; molinate and thiobencarb in Butte Slough. Significant toxicity was seen in one acute test. Ratio of pesticide analysis samples to biotoxicity samples=45:1. General QA/QC information given in report. Data entered from originals. Memo available: <http://www.cdpr.ca.gov/docs/sw/riceprog.htm> (Rice Pesticides Program 1998 Update).

UNITED STATES GEOLOGICAL SURVEY (41): “Pesticide monitoring in the Sacramento River Basin for the USGS National Water Quality Assessment Program” by J. Domagalski. 6545 pesticide analysis records; no biotoxicity data; no water quality data. Samples were taken from the Sacramento River at Freeport, Arcade Creek, the Feather River, and Colusa Basin Drain at Knights Landing during 1996-98 and analyzed for a total of 85 pesticides; 43 were detected. Data sent on hard-copies (J. Domagalski, personal communication) NAWQA QA/QC is well documented.

CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD (43): “Pesticides in surface water from applications on orchards and alfalfa during the winter and spring 1991-92” by C. Foe and R. Sheipline, February 1993. Eleven orchard sites in the Sacramento and San Joaquin River watersheds and 13 alfalfa sites in the Delta Estuary were monitored weekly in spring 1992. Acute and chronic *Ceriodaphnia dubia* bioassays

were performed according to USEPA methods. Toxic samples were submitted for pesticide. Data entered from report.

DELTAKEEPER (44): “Conclusions from review of the City of Stockton urban stormwater runoff aquatic life toxicity studies conducted by the Central Valley Regional Water Quality Control Board, DeltaKeeper, City of Stockton, and the University of California, Davis Aquatic Toxicology Laboratory between 1994 and 1999” by G.F. Lee and A. Jones-Lee, preliminary report to the State Water Resources Control Board, Sacramento, CA, June 1999. Monitoring data results for 1996-98 were transmitted electronically by CVRWQCB staff. 20 pesticide analyses by ELISA or GC/MS. Diazinon and/or chlorpyrifos detections at six Delta sites. Biototoxicity data not submitted. No QA/QC information given in report.

DOW AGROSCIENCES (45): “A monitoring study to characterize chlorpyrifos concentration patterns and ecological risk in an agriculturally dominated tributary of the San Joaquin River” by N.N. Poletika and C.K. Robb, Dow AgroSciences LLC Study ENV96055, November 18, 1998. 3173 pesticide analysis records; no bioassays; no water quality data reported. Daily composite samples were taken from three sites on Orestimba Creek, Stanislaus County, from 5/96 through 4/97 and analyzed for chlorpyrifos, diazinon, and methidathion. Weekly grab samples also collected from the Orestimba Creek site near Crows Landing. Chlorpyrifos was detected in 786 of 1143 samples, diazinon in 877 of 1063, and methidathion in 58 of 967 samples. QA/QC information given in report. Dataset transmitted electronically and checked against report. Originals at Dow AgroSciences.

UNITED STATES GEOLOGICAL SURVEY (46): “Occurrence and distribution of dissolved pesticides in the San Joaquin River Basin, California”, by S.Y. Panshin, N.M. Dubrovsky, J.M. Gronbert, and J.L. Domagalski, 1998. USGS National Water-Quality Assessment Program, water-resources investigations report 98-4032. Water samples were collected throughout 1993 from sites on the San Joaquin River and three of its tributaries: Orestimba Creek, Salt Slough, and the Merced River. Of 83 pesticides analyzed for, 49 compounds were detected. Six compounds were detected in more than 50% of the samples: dacthal, EPTC, metolachlor, simazine, chlorpyrifos, and diazinon. QA/QC information given in report.

UNITED STATES GEOLOGICAL SURVEY (47): “Pesticides in storm runoff from agricultural and urban areas in the Tuolumne River basin in the vicinity of Modesto, California” by C.R. Kratzer, 1998. USGS National Water-Quality Assessment Program, water-resources investigations report 98-4017. 5,142 pesticide analysis records. Storm runoff samples taken from an agricultural site and urban storm drains in Modesto were analyzed for 46 pesticides; 15 were detected overall. QA/QC information not given in report, however, NAWQA methods are well documented and can be accessed through USGS. Data downloaded from internet and checked against report.

CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD (48): “Sources and concentrations of diazinon in the Sacramento watershed during the 1994 orchard spray season” by R. Holmes, C. Foe and V. De Vlaming, draft June 1998. 1,422 pesticide and ELISA analysis records. Water samples were collected before and after rainstorms from 21 sites on the Sacramento and Feather rivers and their tributaries in January through March 1994. Samples were analyzed for diazinon and 29 other pesticides, 25 were detected at least once. QA/QC information, including split sample comparisons and recoveries, is given in report. Method validation is referenced. Detections reported below the LOQ were entered as zero in the database. Data transcribed from report.

CITY OF MODESTO (49): “Toxicity of urban runoff in Modesto, California, May 1999” prepared by Aquatic Toxicology Laboratory, UCD. 1999. Sampling conducted from October 1998 through April 1999. A total of 376 analyses. A total of 56 pesticides were analyzed for; six were detected: carbaryl, chlorpyrifos, diazinon,

methidathion, prometon, and simazine.

CITY OF PALO ALTO (50): City of Palo Alto monitoring, Santa Clara county. Urban monitoring data for diazinon and chlorpyrifos, chemical analysis data, ELISA, 1996-98. Data entered from spreadsheets provided by project manager.

CITY AND COUNTY OF SACRAMENTO (51): Sacramento stormwater NPDES permit monitoring program, 1990, 1991, 1992, 1994-95, and 1995-96. Samples were collected during storms for some years, and during dry weather for other years. Total of 7,410 records. A total of 84 pesticides were analyzed for; 11 were detected. Method validation referenced to EPA method numbers. Laboratory control standards (LCS) recovery, method blanks, matrix spike recovery, and field blanks are included for some years as part of the QA/QC program for the study. Results reported that did not meet QA/QC data quality objectives are flagged and noted in remarks. Duplicate laboratory analysis data given. Bioassay data not submitted.

CITY OF STOCKTON (52): "City of Stockton: 1995-96 National Pollution Discharge Elimination System Storm Water Monitoring Program." The study was performed as Part 2 of an application for an NPDES storm water discharge permit. Eight pesticides, water quality and Phase 1 and 2 Toxicity Identification Evaluations analyses were performed on storm water samples taken from January 16, 1996 to April 17, 1996. All eight pesticides were detected- DDT, DDE, chlorpyrifos, diazinon, malathion, methyl parathion, prometon, and pendimethalin. TIEs showed statistically significant toxicity towards test animals, *Ceriodaphnia dubia*. All data and QA/QC information were taken from a published report.

DEPARTMENT OF PESTICIDE REGULATION (53): Department of Pesticide Regulation 1999 rice pesticide monitoring program. Memo available: <http://www.cdpr.ca.gov/docs/sw/riceprog.htm> (Rice Pesticides Program 1999 Update).

CITY OF PALO ALTO (54): City of Palo Alto-San Francisquito Creek CRMP monitoring, San Mateo county. Urban monitoring data for diazinon and chlorpyrifos, chemical analysis data. Data entered from spreadsheets provided by project manager.

DEPARTMENT OF PESTICIDE REGULATION (56): Kim, D. 1999. Monitoring Surface Water for Selected Insecticides in Red Imported Fire Ant Treatment Areas. Red Imported Fire Ant ambient surface water monitoring data, 1999-2002. 2187 records. Includes monitoring data for 12 pesticides, 60 sampling dates, 12 sampling sites. Data entered from original chain of custody reports. View protocol at <http://www.cdpr.ca.gov/docs/rifa/stdyprot.htm> and reports and related documents at <http://www.cdpr.ca.gov/docs/rifa/>.

DEPARTMENT OF PESTICIDE REGULATION (57): Nordmark, Craig. 1999. Preliminary results of acute and chronic toxicity testing of surface water monitored in the Sacramento River watershed, winter 1998-99. Memorandum to Don Weaver, Environmental Monitoring and Pest Management, Department of Pesticide Regulation, Sacramento, California. May 26, 1999. 1,460 pesticide analysis records, 57 biotoxicity test result measurements. Water samples were taken from the Sacramento River at Alamar (Sacramento County), two sites in the Sutter Bypass, and the Wadsworth Canal from December 1998 through March 1999. The samples were analyzed for 19 pesticide active ingredients. Diuron was detected at all 3 sites. Diazinon and diuron were detected in Sutter Bypass. Bromacil, diazinon, diuron, hexazinone, methidathion, and simazine were detected in Wadsworth Canal. Significant biotoxicity was not seen in acute or chronic samples. Ratio of pesticide analysis samples to acute and chronic biotoxicity testing samples = 1:1. Method validation referenced to the USEPA. Data entered from original chain of custody reports. Summary memo available: <http://www.cdpr.ca.gov/docs/sw/swmemos.htm>.

DEPARTMENT OF PESTICIDE REGULATION (58): Ganapathy, Carissa. 1999. Preliminary results of acute and chronic toxicity testing of surface water monitored in the San Joaquin River watershed, winter 1998-99. Memorandum to Don Weaver, Environmental Monitoring and Pest Management, Department of Pesticide Regulation, Sacramento, California. July 20, 1999. 1,026 pesticide analysis records, 91 biotoxicity test result measurements. Water samples were taken from the San Joaquin River at Vernalis and Orestimba Creek, a tributary to the San Joaquin, from December 1998 through March 1999 and analyzed for a total of 19 pesticide active ingredients. Bromacil, cyanazine, diuron, and simazine were detected at both sites. In addition, diazinon was detected in the San Joaquin River. Method validation referenced to the USEPA. Data entered from original chain of custody reports.

Summary memo available: <http://www.cdpr.ca.gov/docs/sw/swmemos.htm> .

CALIFORNIA STATE WATER RESOURCES CONTROL BOARD (60): California State Water Resources Control Board - Division of Water Quality. Aquatic Toxicity in the Pajaro River. Data entered from report. Report on file in database archives.

DEPARTMENT OF PESTICIDE REGULATION (62): Jones, DeeAn. 2000. "Preliminary results of acute and chronic toxicity in the San Joaquin River watershed, winter 1999-2000". Environmental Monitoring and Pest Management, Department of Pesticide Regulation, Sacramento, California. 1,026 pesticide analysis records. Water samples were taken from the San Joaquin River at Vernalis and Orestimba Creek, a tributary to the San Joaquin, from December 1999 through March 2000 and analyzed for a total of 19 pesticide active ingredients. Bromacil, cyanazine, diuron, and simazine were detected at both sites. In addition, diazinon was detected in the San Joaquin River. Summary memo available:

<http://www.cdpr.ca.gov/docs/sw/swmemos.htm> .

DEPARTMENT OF PESTICIDE REGULATION (63): Nordmark, Craig. 2000. "Preliminary results of acute and chronic toxicity in the Sacramento River watershed, winter 1999-2000". Environmental Monitoring and Pest Management, Department of Pesticide Regulation, Sacramento, California. 1,460 pesticide analysis records. Water samples were taken from the Sacramento River at Alamar (Sacramento County), two sites in the Sutter Bypass, and the Wadsworth Canal from December 1999 through March 2000. The samples were analyzed for 19 pesticide active ingredients. Diuron was detected at all 3 sites. Diazinon and diuron were detected in Sutter Bypass. Bromacil, diazinon, diuron, hexazinone, methidathion, and simazine were detected in Wadsworth Canal. Method validation referenced to the USEPA. Data entered from original chain of custody reports.

Summary memo available: <http://www.cdpr.ca.gov/docs/sw/swmemos.htm> .

SACRAMENTO RIVER WATERSHED PROGRAM (66): Event-based Monitoring of Organophosphate Pesticides in the Sacramento Valley, Winter 1999-2000. Sac. River Watershed Program.

DEPARTMENT OF PESTICIDE REGULATION (67): Department of Pesticide Regulation 2000 Rice Pesticide Monitoring Program results. Data entered from original chain of custody reports.

DEPARTMENT OF PESTICIDE REGULATION (70): Bacey, J. 2002. "Preliminary Results of Pesticide Residue Analysis Acute and Chronic Toxicity Testing of Surface Water Monitored in the San Joaquin River Watershed, Winter 2000-2001". Data entered from original chain of custody reports.

Summary memo available: <http://www.cdpr.ca.gov/docs/sw/swmemos.htm>.

DEPARTMENT OF PESTICIDE REGULATION (71): Gill, S. 2002. "Preliminary Results of Pesticide Residue Analysis, and Acute and Chronic Toxicity Testing of Surface Water Monitored in the Sacramento

River Watershed, Winter 2000-2001". Data entered from original chain of custody reports. Summary memo available: <http://www.cdpr.ca.gov/docs/sw/swmemos.htm>.

DEPARTMENT OF PESTICIDE REGULATION (73): Department of Pesticide Regulation 2001 Rice Pesticide Monitoring Program results. Data entered from original chain of custody reports. Memo available: <http://www.cdpr.ca.gov/docs/sw/riceprog.htm> (2001 Rice Pesticides Program Review).

DEPARTMENT OF PESTICIDE REGULATION (74): Bacey, N. 2003. "Preliminary Results of Study #214: Monitoring the Occurrence and Concentration of Esfenvalerate and Permethrin Pyrethroids". Data entered from original chain of custody reports. Summary memo available: <http://www.cdpr.ca.gov/docs/sw/swmemos.htm>.

DEPARTMENT OF PESTICIDE REGULATION (75): Department of Pesticide Regulation 2002 Rice Pesticides Monitoring Program results. Data entered from original chain of custody reports. Reports available: <http://www.cdpr.ca.gov/docs/sw/riceprog.htm> (2002 Rice Pesticides Program Monitoring Data).

DEPARTMENT OF PESTICIDE REGULATION (76): Starnier, K. 2002. "Monitoring Surface Waters of the San Joaquin River Basin for Selected Summer-Use Pesticides". Data entered from original chain of custody reports. Protocol available: <http://www.cdpr.ca.gov/docs/sw/protocol.htm> Report available at: <http://www.cdpr.ca.gov/docs/sw/swemreps.htm>

UNITED STATES GEOLOGICAL SURVEY (77): US Geological Survey, "Dissolved Pesticides in the Alamo River and the Salton Sea, California, 1996-97", by Kathryn L. Crepeau, 2002, Open file report 02-232. Report: <http://water.usgs.gov/pubs/of/ofr02232/>

SACRAMENTO RIVER WATERSHED PROGRAM (80) Sacramento River Watershed Program data, 1998-2002, monitoring years 1-4.(No pesticide data was collected for 1998). 11,437 pesticide analysis records. Includes monitoring data for 75 pesticides, 62 sampling dates, 14 sampling sites in 9 counties. Data entered from spreadsheets provided by data manager.

UNITED STATES GEOLOGICAL SURVEY (81) Irrigation-Season Organophosphate Monitoring in the San Joaquin River Basin, 2001. Data from weekly irrigation-season sampling at 12 major mainstem and tributary sites, April through August 2001. Data entered from spreadsheets provided by USGS. Includes monitoring data for over 45 pesticides, 25 sampling dates, and 12 sampling sites in 3 counties.

Chemical analysis by Schedule 2001. QA data on file. Limit of Quantitation (LOQ) reported here is USGS MRL (minimum reporting level). Concentrations below LOQ reported by USGS as estimated concentrations are reported as trace detections in the full database and as nondetections in the concentration field.

DEPARTMENT OF PESTICIDE REGULATION (82): Kelley, K. 2003. "Monitoring Surface Waters and Sediments of the Salinas and San Joaquin River Basins for Synthetic Pyrethroid Pesticides". Monitoring data from June through September, 2003. Data included for analysis of whole water and sediment samples for pyrethroid and organophosphate insecticides. Data entered from original chain of custody reports. Includes monitoring data for 21 pesticides, 29 sampling dates, and 8 sampling sites in 2 counties. 3570 records. Summary memo available at: <http://www.cdpr.ca.gov/docs/sw/caps/study219mem.pdf>.

DEPARTMENT OF PESTICIDE REGULATION (83): Starnier, K. 2004. "A Preliminary Assessment of Pyrethroid Contamination of Surface Waters and Bed Sediments in High Pyrethroid-Use Regions of California". Statewide pyrethroid monitoring study. Includes whole water and bed sediment analysis for

pyrethroid insecticides and whole water analysis for organophosphate insecticides. Samples collected from Imperial, Monterey, Sutter, Yuba, San Joaquin, Stanislaus, and Madera counties. 1721 records.

Protocol available at : <http://www.cdpr.ca.gov/docs/empm/pubs/protocol/prot224.pdf>

Summary results available at: [http://www.cdpr.ca.gov/docs/sw/swposters/setac\\_starner.pdf](http://www.cdpr.ca.gov/docs/sw/swposters/setac_starner.pdf)

CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD (85): Urban pyrethroid monitoring. Sediment samples from Placer county. Includes analysis for pyrethroid, organochlorine and OP (chlorpyrifos) pesticides. "Aquatic toxicity due to residential use of pyrethroid insecticides", Env Sci Tech 39:9778-9784, 2005, D. Weston, R. Holmes, J. You, M. Lydy. Additional information acquired from D. Weston. 480 records.

UNITED STATES GEOLOGICAL SURVEY (100) USGS National Water Quality Assessment Program (NAWQA) data, through water year 2003. 51,080 records. Downloaded: <http://water.usgs.gov/nawqa/>.

LOQ = limit of quantitation

GC/FPD = gas chromatography/flame photometric detector

HPLC/PCDFD = high pressure liquid chromatography/post column derivitization with fluorescence detector

GC/ECD = gas chromatography/electron capture detector

GC/NPD = gas chromatography/nitrogen phosphorus detector

GC/MSD = gas chromatography/mass selective detector